

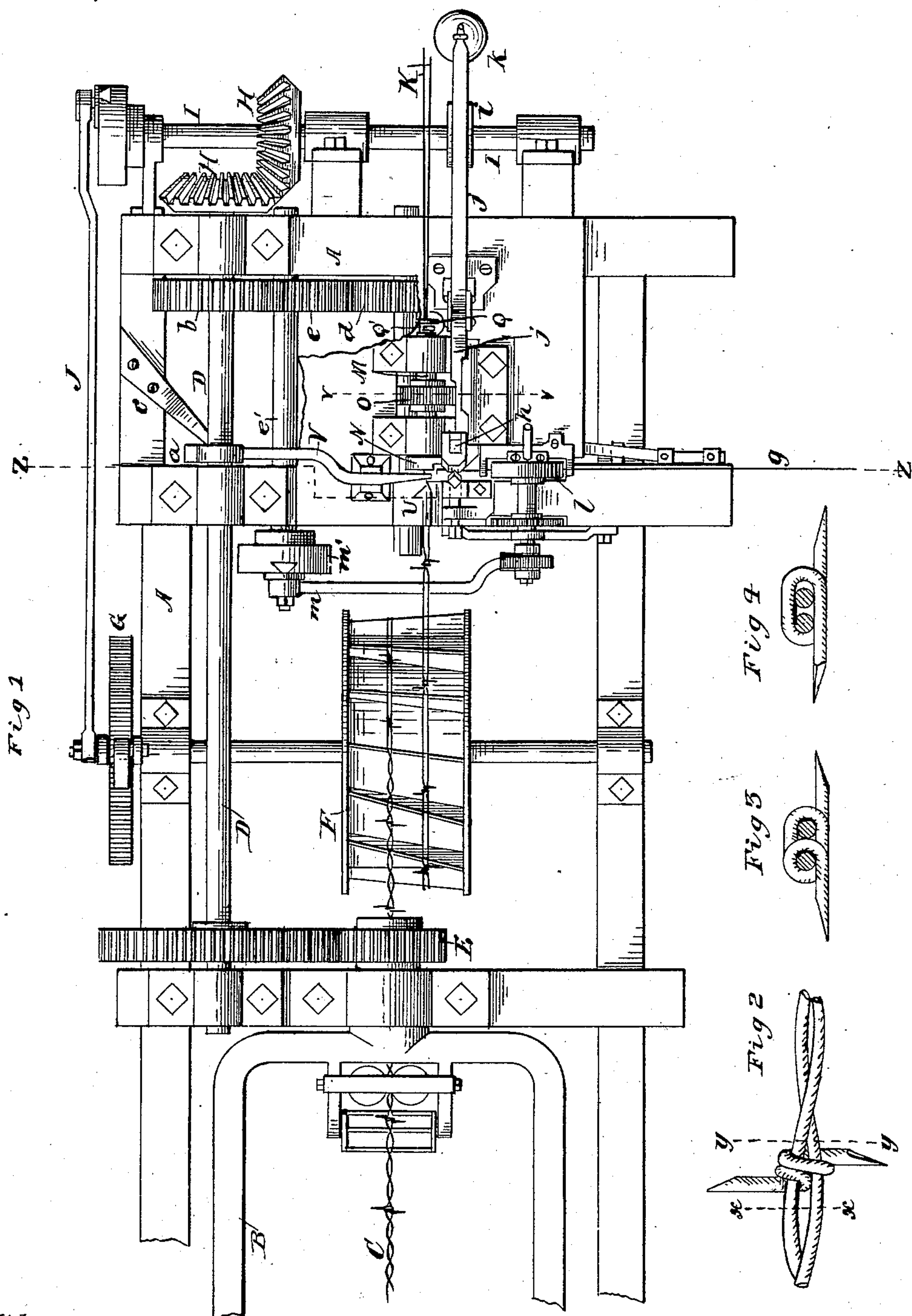
(No Model.)

3 Sheets—Sheet 1.

O. O. KITTLESON.
BARBED WIRE MACHINE.

No. 280,189.

Patented June 26, 1883.



Witnesses

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(No Model.)

3 Sheets—Sheet 2.

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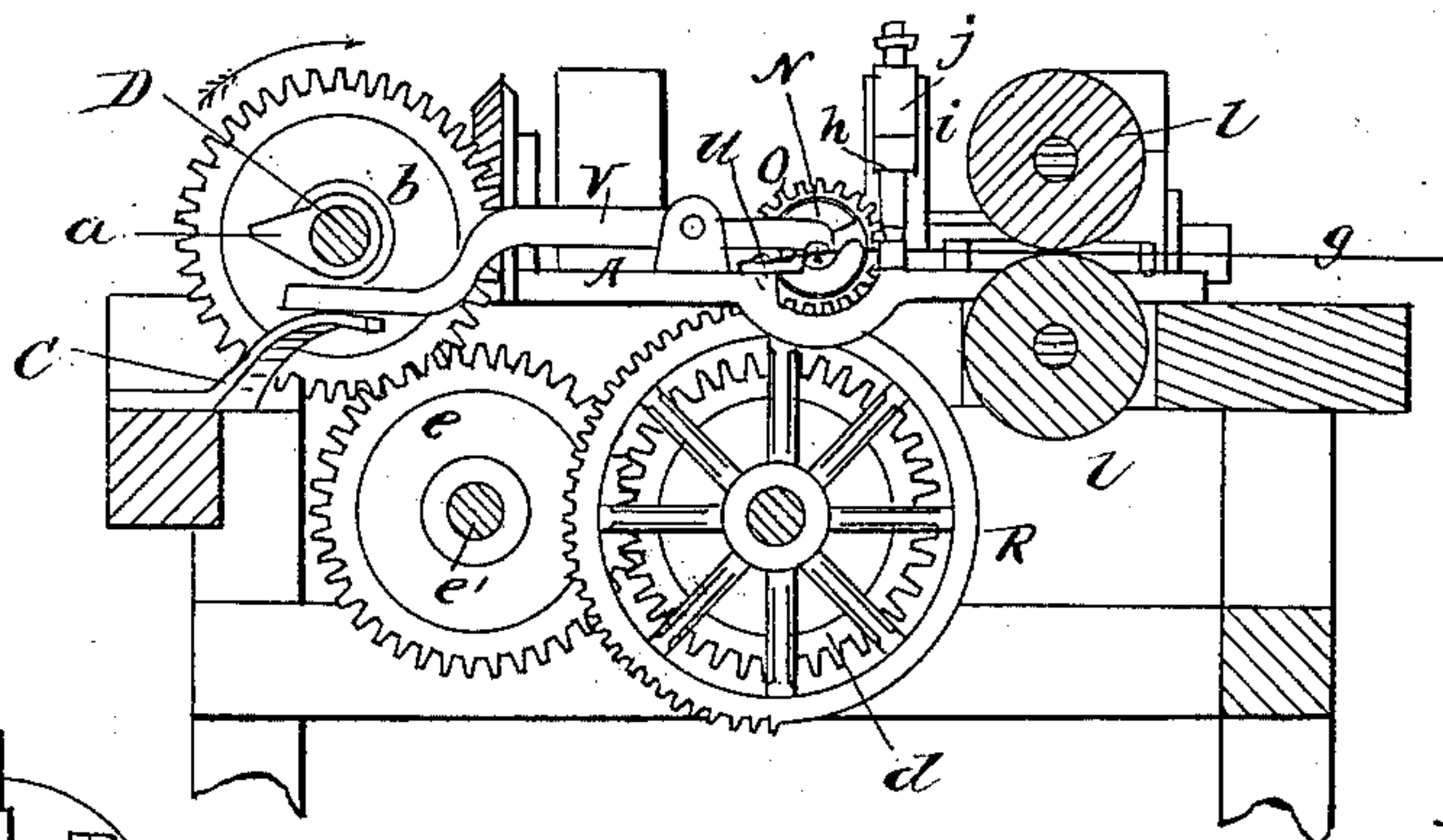


Fig 5

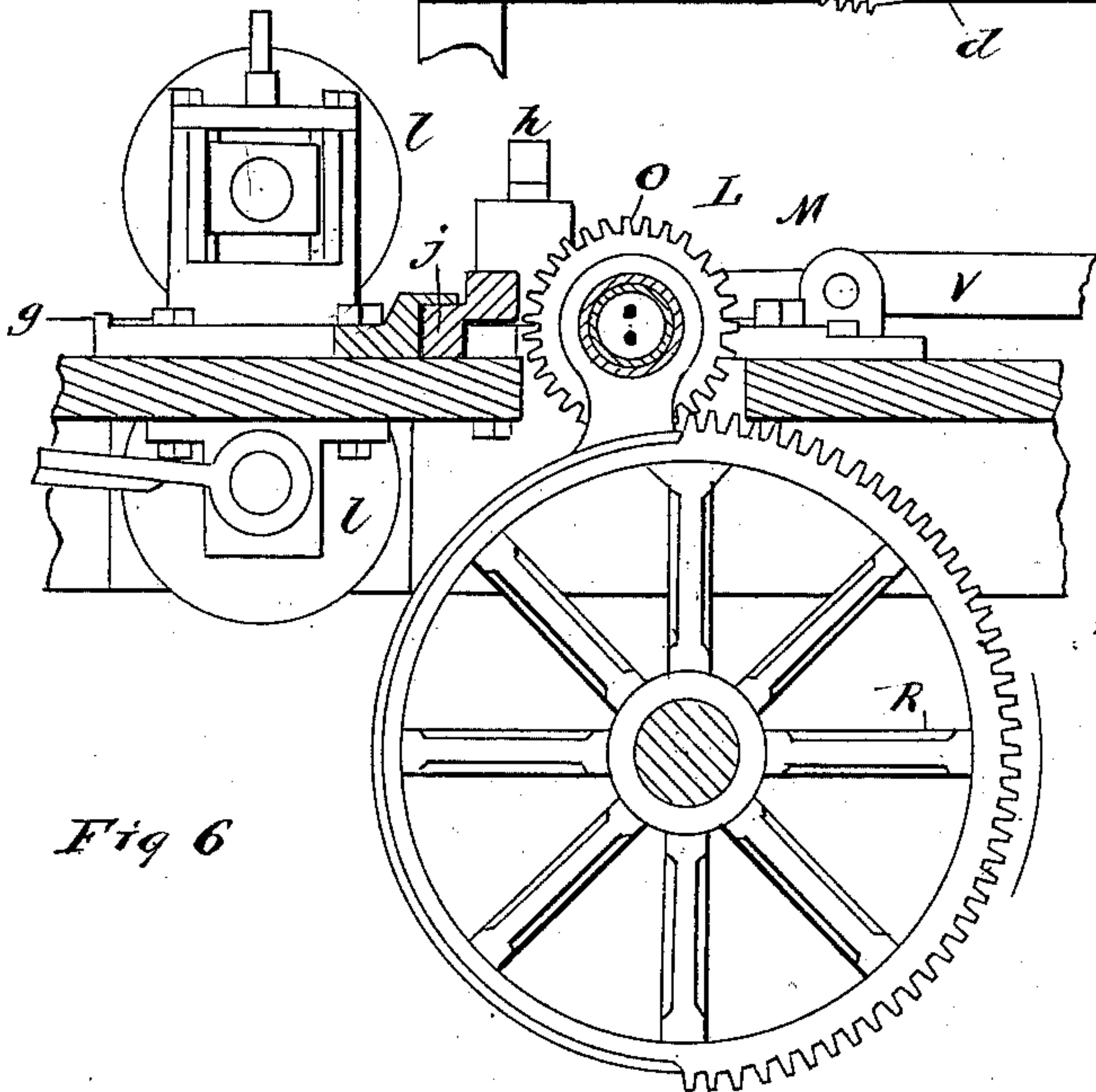


Fig 6

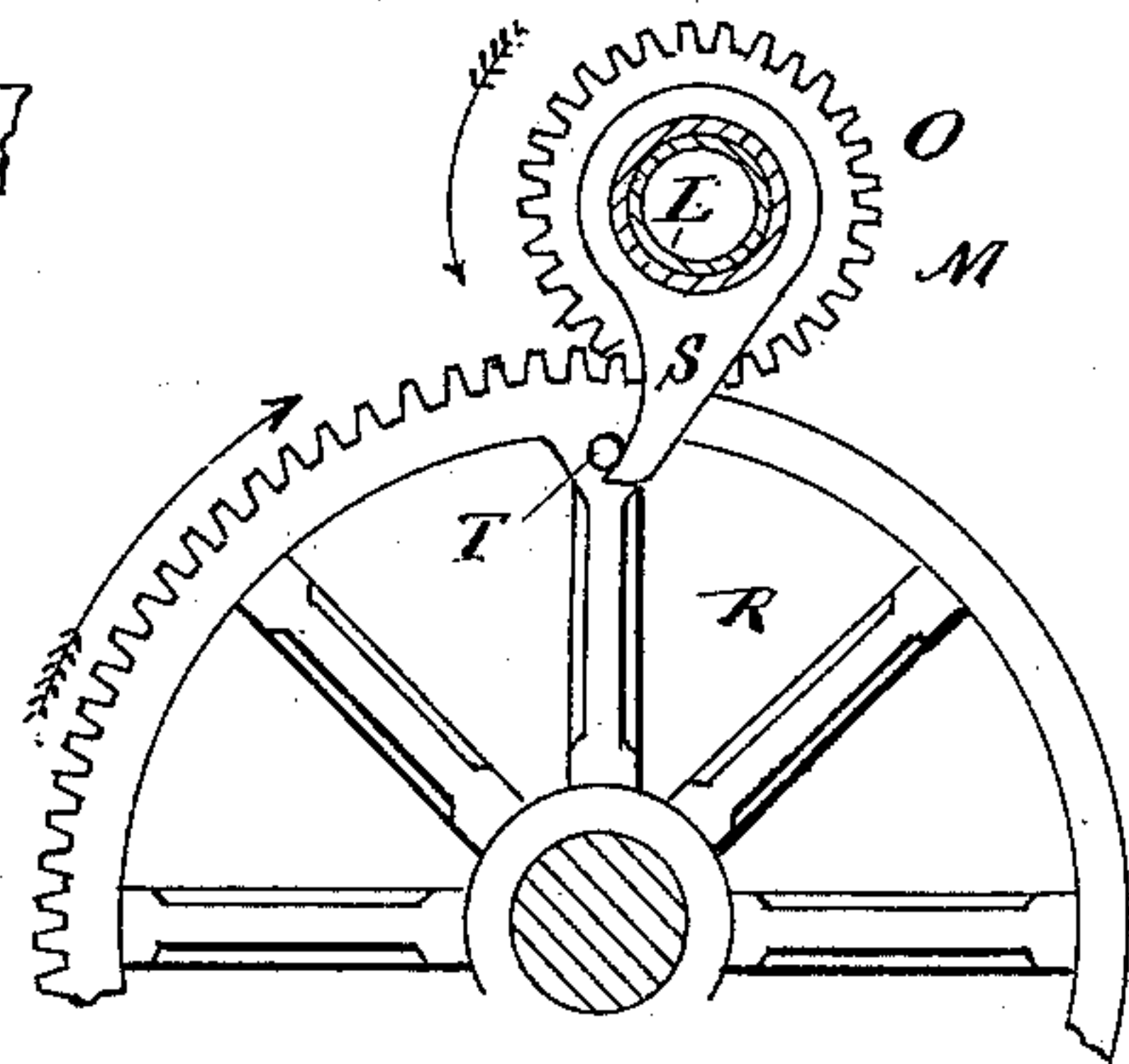


Fig 7

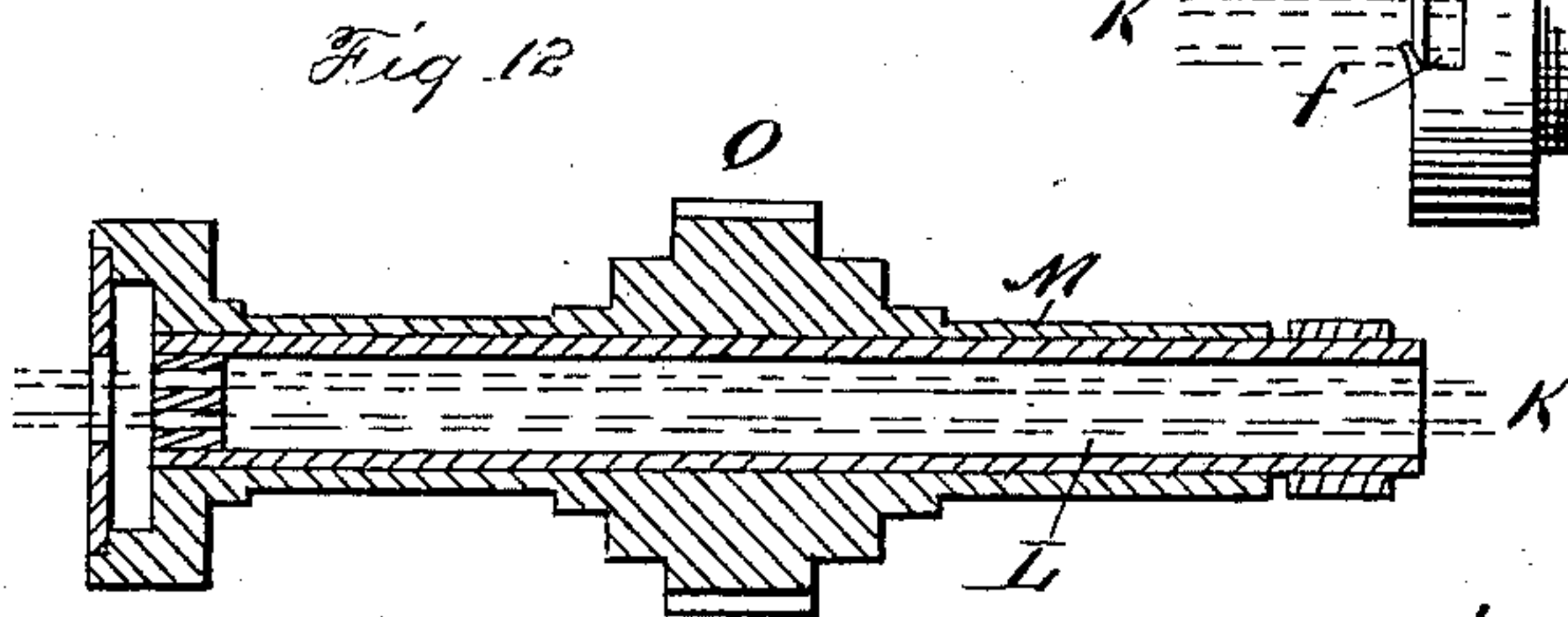


Fig 12

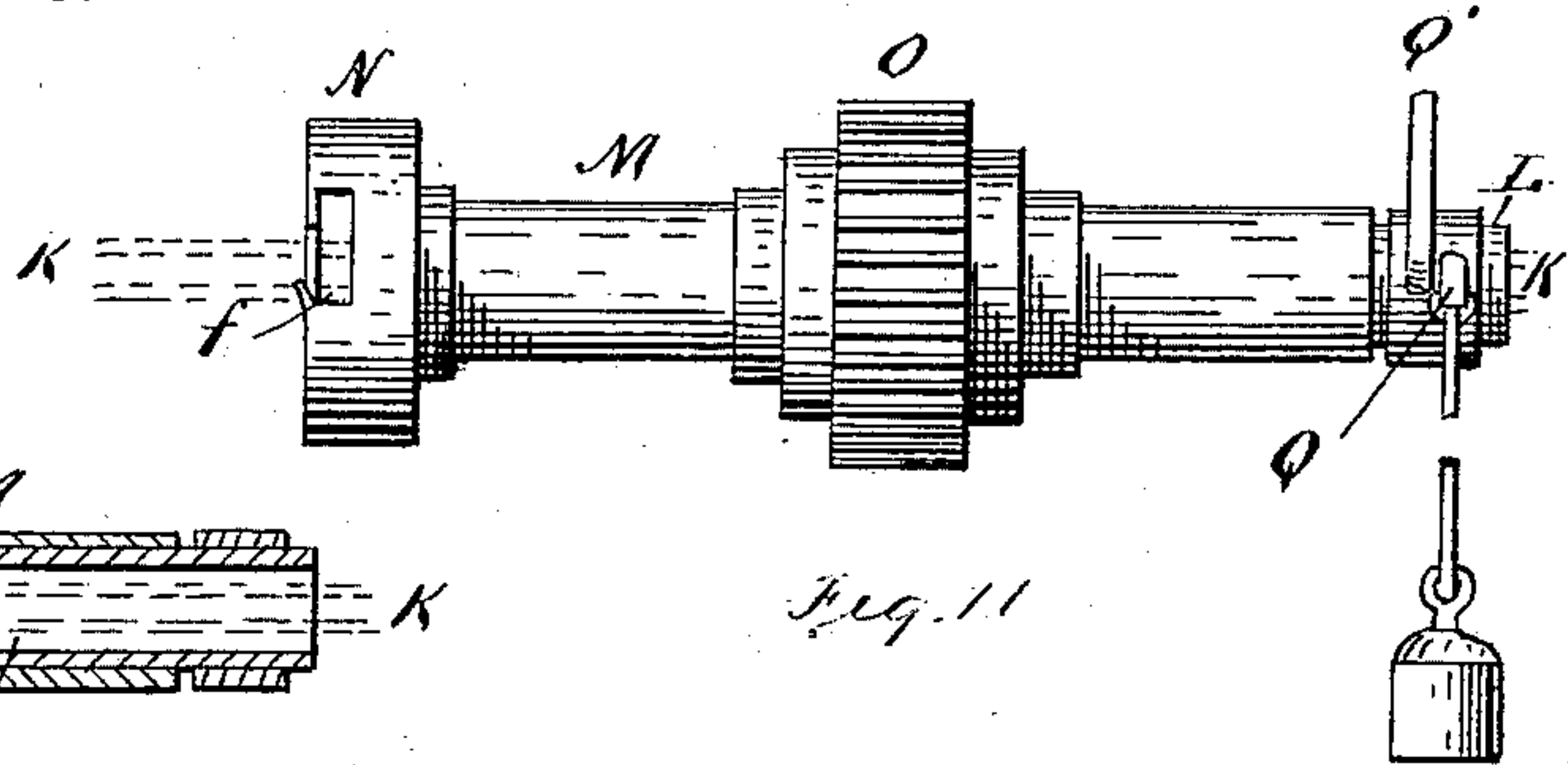


Fig 11

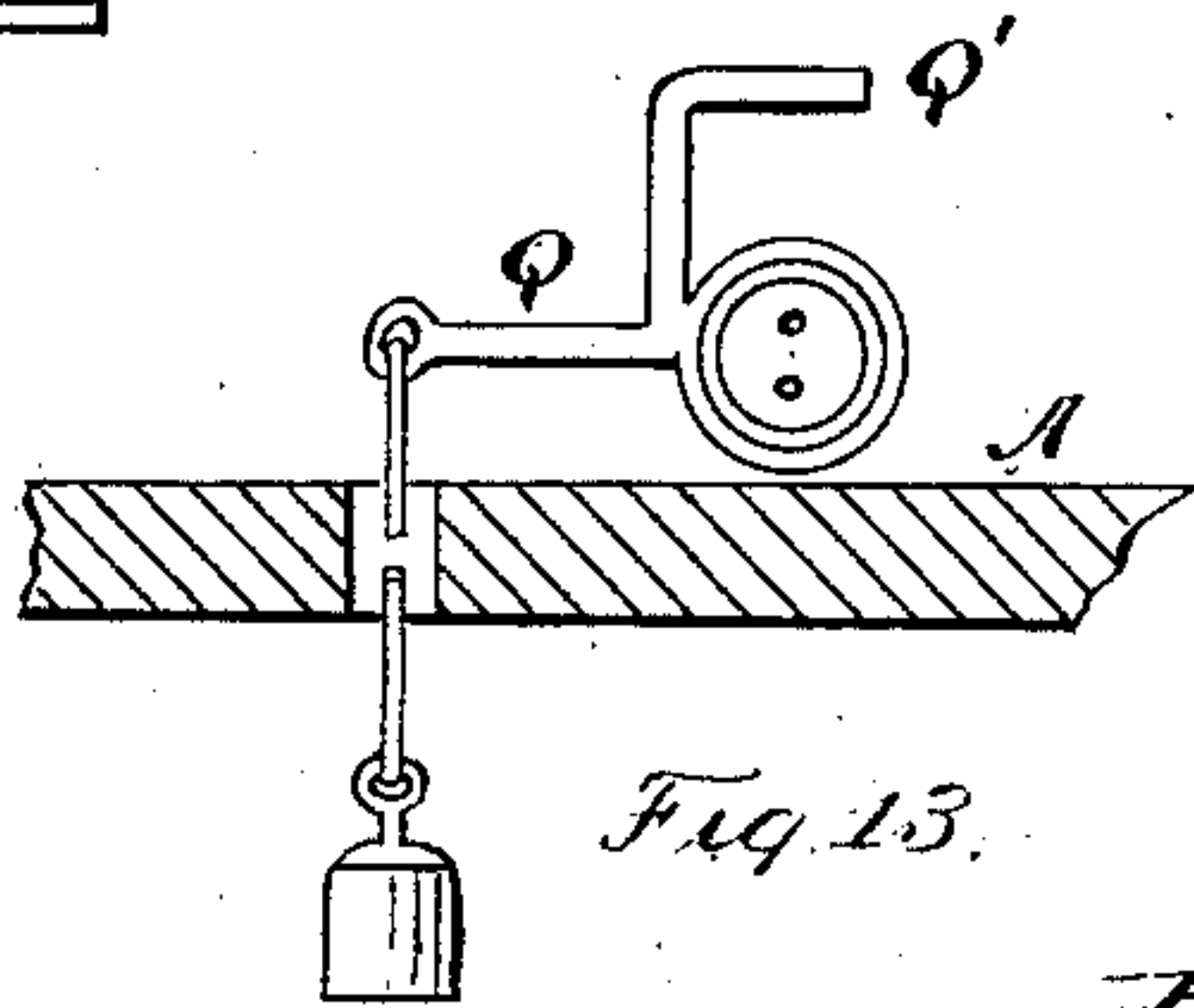


Fig 13.

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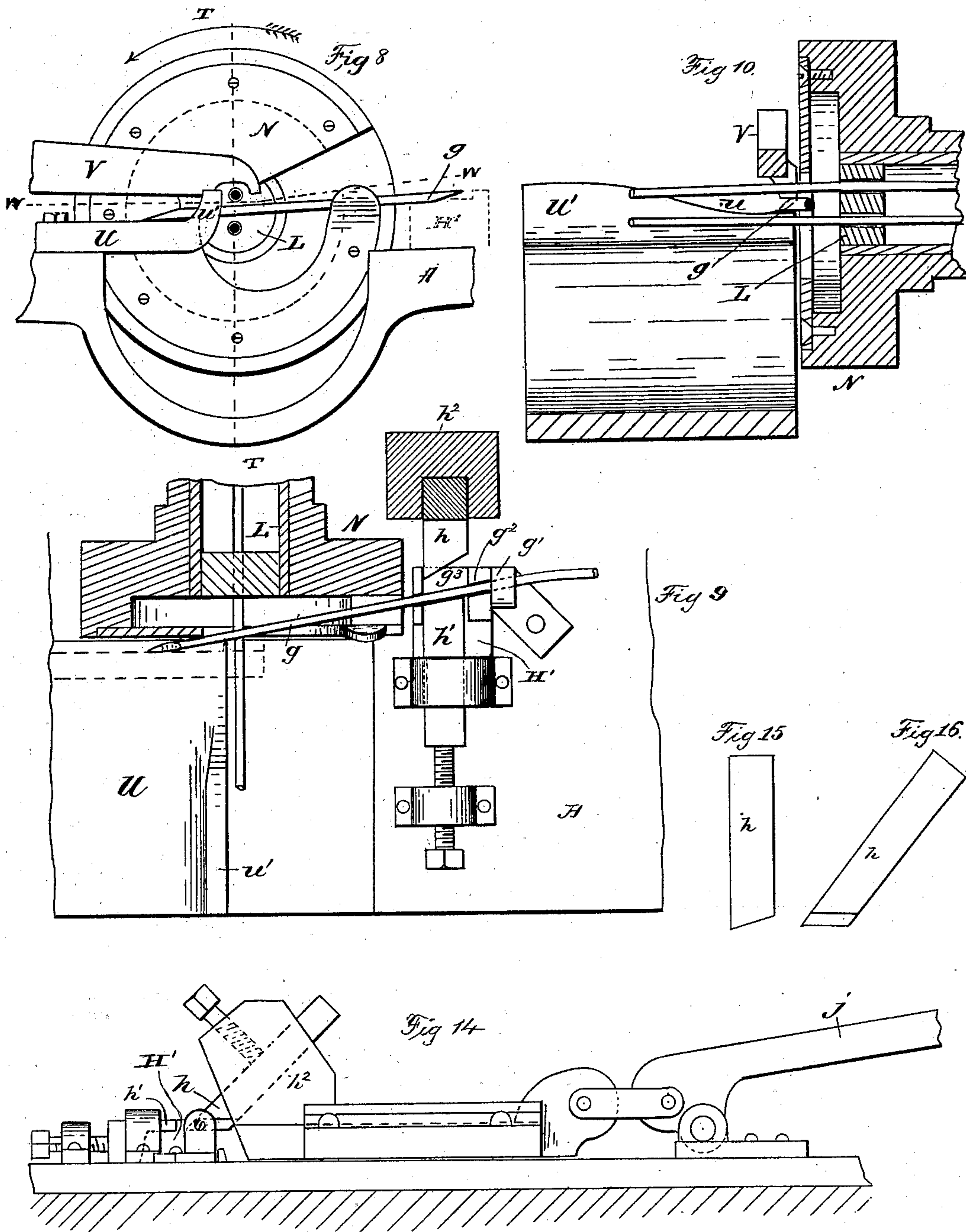
(No Model.)

3 Sheets—Sheet 3.

O. O. KITTLESON.
BARBED WIRE MACHINE.

No. 280,189.

Patented June 26, 1883.



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UNITED STATES PATENT OFFICE.

OLE O. KITTLESON, OF LEE, ILLINOIS, ASSIGNOR TO THE WASHBURN & MOEN MANUFACTURING COMPANY, OF WORCESTER, MASSACHUSETTS, AND ISAAC L. ELLWOOD, OF DE KALB, ILLINOIS.

BARBED-WIRE MACHINE.

SPECIFICATION forming part of Letters Patent No. 280,189, dated June 26, 1883.

Application filed March 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, OLE O. KITTLESON, of the town of Lee, county of Lee, and State of Illinois, have invented a new and useful Improvement in Barbed-Wire Machines, of which the following is a full and clear description of the parts pertaining to my improvements, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a top or plan view of the machine containing my improvements; Fig. 2, a plan view of a short section of the barbed-wire made by my machine; Fig. 3, a cross-section of the barbed wire at line *x x*, 15 Fig. 2; Fig. 4, a cross-section on line *y y*, Fig. 2. Fig. 5 is a transverse section taken at the line *z z*, Fig. 1; Fig. 6, a transverse section taken at the line *v v*, Fig. 1; Fig. 7, a side elevation of the same cog-wheels shown in Fig. 20 6, from the opposite side. Fig. 8 is a detached view of the barb-twisting head. Fig. 9 is a horizontal section of the said twister-head, on line *w w*, Fig. 8. Fig. 10 is a vertical section on line *t t*, Fig. 8. Fig. 11 is a detached side view 25 of the same twister-head, and hollow cylinder to which it is attached. Fig. 12 is a vertical section of the same. Fig. 13 is an end view of the cylinder with certain of its attachments. Fig. 14 is a side view of the barb-cutting mechanism. Fig. 15 is a front view of the movable 30 knife or cutter, and Fig. 16 is a side view of the same.

My invention relates to that class of barbed-wire machines which make double-strand 35 barbed wire, twisting the two strands of wire together, and at regular intervals placing upon the two strands a single barb, which passes between the two wires of the strand and winds about them.

40 My invention consists in the particular construction of the coiler-head, which applies the barb to the strand and winds it around the double strand, leaving the ends projecting in opposite directions, with the coil of the barb 45 in the form of a coil, so that the wire coils lie side by side.

It further consists in the special attachments for applying the barb and holding it as it is

being coiled; and, also, in the combination of the attachments to the coiler-head, whereby 50 its movements in connection with the double strand of wire are controlled, all as hereinafter more fully described. I make a frame for holding the operative parts of my invention in any ordinary form of frame of barbed-wire 55 machines, with the ordinary attachments for holding the wire-spools and the reel for reeling up the barbed wire.

In the accompanying drawings, A represents the top of the frame. 60

B is a portion of the frame that carries the spool upon which the barbed wire is wound. This frame B revolves to twist the barbed-wire strands C in the ordinary manner.

D is the main shaft for transmitting power 65 to the various operating parts of the machine.

E is a gearing for revolving the frame B to twist the main strand of wire.

F is a drum, around which the barbed wire passes between the barbing apparatus and the 70 spool upon which it is wound, this being for the purpose of preventing the twist of the main strands from passing directly back to the barbing device. A ratchet-wheel, G, is fixed to the shaft of drum F, and a crank-arm, G', is supported loosely thereon. A pawl, G², at the 75 upper end of said crank-arm engages the teeth of ratchet G. The crank-arm and pawl are reciprocated by the pitman, connected at one end with the crank-arm G' and at the oppo- 80 site end with a crank-pin at the end of shaft I, which latter is revolved continuously by the bevel-gears H. An intermittent rotation is thus imparted to the ratchet-wheel G and drum F. 85

K is the wire as it passes into the machine, there being two strands passing side by side into the tube L. This tube L lies within the tube or cylinder M, to which the coiler-head N is rigidly attached. The tube or cylinder M 90 has rigidly attached to it the cog-wheel O. The tube L has a weighted arm, Q, the weight serving the purpose to always hold this tube in its normal position, excepting when it is turned, as hereinafter specified, a certain dis- 95 tance regulated by the arm Q, which serves

as a stop by striking the frame A. The object of having the tube to turn will be explained below.

R is a segmental cog-wheel, which engages
5 with the wheel O to turn the coiler-head N at proper intervals for coiling the barb around the double wire-strand.

S is an arm projecting down from the cog-wheel O and strikes against the pin T on the
10 segmental cog-wheel R, so as to always insure the starting of the cog-wheel O with the tube M, which carries the coiler-head N at a certain point in the revolution of the segmental wheel R.

15 U is a stop or rest just in front of the coiler-head N, against which the end of the barb that is passed between the two wires of the strand is held while the barb is being coiled around the strand.

20 V is a presser-arm that presses upon the end of the barb when it rests against the stop U and holds it in place against the coiler-head N. The stop U consists of a plate bolted to the machine-frame and preferably (see Fig. 8) extended into proximity with the tube L, so as
25 to support the barb close to the strand-wires. It is preferably provided with an elevation at u' , for a purpose hereinafter indicated. When the coiling of the barb is being accomplished,
30 the presser V is thrown into position to hold the end of the barb, as above described, by the spring c , secured to the frame A.

a is a cam secured to the shaft D, which cam is for the purpose of raising the presser V out
35 of position after the barb is formed, and thereby freeing the end next to the coiler-head, so as to admit the free passage of the barb from that point. The cog-wheel b is also secured to the main driving-shaft D, and thereby com-
40 municates power through the supplemental gear e on the shaft e' to the gear-wheel d on the same shaft as the segmental gear R, which drives the pinion O on the coiling-head shaft M. The coiler-head N is hollow, and is pro-
45 vided with a face-plate cut away at the center so as to leave an opening, as shown in Fig. 8, thus forming at the front of the head an internal flange for the greater part of the circumference. The twister-head is also provided
50 with a notch, f , through which the wire g is projected, from which the barb is cut, as shown in Fig. 9. The barb-wire g passes through an eye in the upright part of plate g' , bolted to the frame A, and also through a groove, g^2 , in
55 the block H', secured to frame A. The groove and eye are inclined to the axis of the coiler-head, so that they deflect the wire and cause it to pass obliquely into said head.

At g^3 there is a wide groove to receive the
60 movable and stationary knives or cutters h h' . The knife or cutter h is held in its sliding carrier h^2 in an inclined position, and is ground on the lower end at an angle to the horizontal, as shown in Figs. 15 and 16. The carrier h^2
65 is operated by the cam i on the shaft I by means of a pivoted bent lever, j . The cam

i raises the weighted end k of this bent pivoted lever and throws the knife h forward to cut the barb from the wire g .

l represents the ordinary feed-rollers, that
70 are operated by means of the pitman m to feed the wire g forward at the proper time into the coiler N, as above described, the pitman m being operated by the crank-wheel m' on the shaft
75 e' of the supplemental gear e .

The operation of my machine is as follows:
When the wires which form the strand are put in place through the tube L, which forms a holder to receive and keep apart the strand-
80 wires and prevent their twisting, the wire g is fed forward, its end passing through the notch f between the wires of the main strand and obliquely through the opening in the face-plate, so that its ends lie on opposite sides of
85 the face-plate, as shown in Figs. 8, 9, and 10, and the knife is thrown forward so as to cut the barb from the wire. The segmental wheel R then engages with the cog-wheel O and com-
90 mences to revolve the coiler, and one end of the barb is thrown down against the stop U, the presser V immediately coming against it to hold it in place. The other end of the barb is carried around the two wires of the strand, passing inside of the coiler-head, forming a
95 coil, (clearly shown in Figs. 2, 3, and 4,) it being carried around by the notch f in the coiler-head. Just at the time that the end which is carried around the strand is brought up to project in the opposite direction from the end
100 which rests against the stop U, it passes out of the notch f , so as to be carried forward around the drum F, the tube L is revolved by means of the barb striking against the
105 wires of the strand till the stop Q' strikes the frame, this quarter-revolution bringing the strand-wires from the vertical position shown into a horizontal one, and causing the end of the barb to be wrapped a quarter of a turn
110 more than it otherwise would around the upper strand-wire, so that in the finished article the end of the barb will project in a direction parallel to the plane of the two wires, (see
115 Figs. 2, 3, 4,) instead of at right angles thereto, as it would if the tube L were held in the position shown in Figs. 8, 9, and 10. When the barb is released the weight attached to the
120 arm Q immediately throws this tube L back to its position, so that the wires of the strand are in position as shown in Figs. 8 and 12, so that the next barb will pass between the wires
125 as the wire g is fed forward to make the next barb, as above described. The raised portion u' of the stop u acts as a guide to the strand-wires between the coiler-head and the drum F. The mechanism for turning the drum is
130 so timed that it advances the strand-wires just after each barb is applied. The segmental wheel R is brought into operation so as to turn the coiler-head at regular intervals, and the other operating parts, which cut the barb, hold it, and coil it, operating at regular intervals to do their work at the proper relative time.

It will be seen from the above description that I make double-strand wire with a single-wire barb, which passes between two wires of the strand and is wound around both wires, the coils of the barb lying side by side upon the wire-strand.

Having thus fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The notched coiler-head provided with a face-plate, forming a continuous internal flange around the greater part of the head, and having an aperture in said face-plate, in communication with the notch, said construction permitting the barb to be inserted through the notch and across the flange, and after coiling to be carried wholly to the front of the plate, substantially as described.

2. The combination, with the notched coiler-head having a face-plate provided with an aperture communicating with the notch, and constituting a continuous internal flange around the head except at said aperture, of automatic barb-inserting mechanism constructed and arranged to insert the barbs in said head partly behind and partly in front of aforesaid flange, substantially as described.

3. The combination of the strand-wire holder, provided with openings for the passage of the strand-wires and adapted to prevent their twisting together, the notched coiler-head having the internal flange cut away adjacent to the notch, but otherwise extending continuously around the head, and the automatic barb-inserting mechanism constructed and arranged to thrust the barbs between the strand-wires and into the coiler-head partly behind and

partly in front of said flange, substantially as described.

4. In combination with the coiler-head and the strand-wire holder provided with openings for the passage of the strand-wires, and adapted to hold them apart and prevent twisting, the automatic barb-inserting mechanism, and the stop, relatively disposed as explained, for catching the end of the barb thrust between said strand-wires and holding it stationary during the coiling operation, substantially as described.

5. A holder for the strand-wires, capable of turning, in combination with a twister-head, a stop to catch one end of the barbs, stops to limit the rotary movement of the twister-head, and a device—such as a weight—for restoring the twister-head, after displacement, to its normal position, substantially as described.

6. The hollow tube L, the twister-head N, segmental cog-wheel R, cog-wheel O, stop Q', and weighted arm Q, or their equivalents, for holding the wires of the strand to receive the barb between them and then admit of their being turned down to a certain positive distance as the barb is twisted, and then brought back into position to receive the next barb, substantially as specified and shown.

7. The presser V, hollow twister-head N, and stop U, combined and operating to hold one end of the barb in place while the other end is being twisted around the wire strand, as specified and shown.

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